Amendment to the Claims:

Before claim 1, please delete the word "Claims" and substitute the following: What is claimed is:

Please cancel all of the claims of the application, namely claims 1-18, and add the following new claims 19-36:

1-18 (Canceled)

19. (New) A method for measuring current in a motor controller comprising the steps of:

employing switching of power semiconductors, a current being sensed by a current sensing device placed on a motor phase;

generating an output signal, the output signal (i_{w1}, i_{v1}) being transmitted to a receiving unit;

sampling with an oversampling frequency (f_s) during a switching period of the power semiconductors, digitally filtering said samples to maintain symmetry of the samples with respect to a centre line of the switching period;

and calculating an average value of the samples.

20. (New) A method according to claim 19, wherein the step of digitally filtering includes hastening and delaying the originally evenly-distributed sample positions to be in quiet PWM zones.

21. (New) A method according to claim 19, wherein the step of digitally filtering includes sorting out samples known to be disturbed as well as sorting out non-disturbed samples.

22. (New) A method according to claims 20, wherein a second average is calculated within the actual switching period using samples from the last half of the preceeding switching period and samples from the first half of the actual switching period to obtain two current values per switching period.

23. (New) A method according to claim 19, wherein the current sensing device is a unipolar magnetic current sensor.

24. (New) A method according to claim 19, wherein that the sampling frequency (f_s) is adjusted according to the result of an initialisation test on one or more current sensing devices in a current free period.

25. (New) A method according to claim 19, wherein the output signal is transmitted differentially.

26. (New) A motor controller comprising a power card and a control card, a current sensing device placed on the power card for generating an output signal to the control card, the output signal (i_{w1}, i_{v1}) being transmitted to an amplifier placed on the control card, the amplifier having a gain determined by components mounted on the power card and components mounted on the control card.

27. (New) A motor controller according to claim 26 wherein the amplifier is a differential amplifier and that the output signal (i_{w1}, i_{v1}) is differentially transmitted.

28. (New) A motor controller according to claim 27,wherein the differential amplifier is a single stage ampliflier having a fixed gain determined by the components on the control card, and that the fixed gain is changeable with the components mounted on the power card.

29. (New) A motor controller according to claim 27, wherein analog filtering degree of the differential amplifier may be set on the power card independent of an internal bandwidth of the current sensing device.

30. (New) A motor controller according to claim 26, wherein the current sensing device is a magnetic current transducer fed with a supply voltage.

31. (New) A motor controller according to claim 30, wherein the supply voltage of a unipolar magnetic current transducer is set to be at least two times larger than an internal voltage reference of the transducer.

32. (New) A motor controller according to claims 30, wherein the supply voltage of a unipolar current transducer is restricted to be in the positive/upper tolerance band of the tolerance on the transducer supply voltage.

33. (New) A motor controller according to claim 32, wherein the actual supply voltage for the current transducer is centered within the upper supply voltage tolerance band of the unipolar current transducer.

34. (New) A motor controller according to claim 30, wherein the magnetic current transducer on the power card gives the output signal a gain which enables the output signal to be used for overcurrent protection of the motor controller.

35. (New) A motor controller according to claim 26, further comprising an A/D-converter programmed to oversample the output signal over the switching period, while hastening and delaying the originally evenly-distributed sample positions to be in quiet PWM zones.

36. (New) A motor controller according to claim 19, wherein several current sensing devices are placed on the power card.